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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/635,440	08/07/2003	Gerd Hein	32860-000549/US	8542
30596	7590	11/03/2005	EXAMINER	
HARNESS, DICKEY & PIERCE, P.L.C.			GUTIERREZ, ANTHONY	
P.O.BOX 8910			ART UNIT	PAPER NUMBER
RESTON, VA 20195			2857	

DATE MAILED: 11/03/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/635,440

Applicant(s)

HEIN, GERD

Examiner

Anthony Gutierrez

Art Unit

2857

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 21 July 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-7, 11-21, 28-34 and 38-55 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-7, 11-21, 28-34 and 38-55 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 21 July 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|---|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

2. Claims 1, 2, 4-7, 12-21, 28, 29, 31-34, 38, 39, 41-46, and 48-53, are rejected under 35 U.S.C. 102(e) as being anticipated by Desprez et al. (US Patent 6,777,917 B2).

As to claims 1, 28, 38, 45, 46, 49, 51, and 52, Desprez et al. discloses a method for balancing capacitors in a capacitor bank, comprises producing at least three voltage levels from a reference voltage source, to monitor the state of charge of the capacitors, determining a capacitor voltage for each capacitor the determined voltages with the produced voltage levels; indicating a correct charge for a capacitor when a corresponding capacitor voltage is determined to be between the two relatively lower voltage levels; indicating a fault in a capacitor when a corresponding capacitor voltage is greater than the relatively highest voltage level and balancing the capacitors only when neither a correct charge nor a fault is indicated (Abstract and col. 6, line 34-col. 7, line 5).

Art Unit: 2857

As to claims 2, 29, and 39, Desprez et al. discloses that a fault in a capacitor is indicated when a gradient of the capacitor voltage during the charging of the capacitor, exceeds a limit value (col. 1, lines 25-31).

As to claims 4, 5, 12, 13, 31, 32, 41, and 42, Desprez et al. implies a sum voltage across two capacitors in the capacitor bank is tapped off as a reference voltage source for balancing by the use of a hysteresis signal (col. 2, lines 52-54 and col. 5, lines 36-60).

As to claims 6, 14, 16, 18, 20, 33, 43, 48, and 50, Desprez et al. discloses wherein after charging the capacitors, normal operation is started for one capacitor when the corresponding capacitor voltage reaches the relatively lowest voltage level and before the corresponding capacitor voltage has reached the relatively central voltage level; balancing begins when the corresponding capacitor voltage has reached the relatively central voltage level, and ends when the capacitor voltage has once again reached the relatively lowest voltage level wherein when the relatively lowest voltage level is reached once again, normal operation is once again started (col. 2, lines 19-29 and col. 3, lines 24-32).

As to claims 7, 15, 17, 19, 21, 34, and 44, Desprez et al. discloses wherein in order to start balancing operation, the capacitor voltages of all the capacitors are raised above the relatively central voltage level (col. 2, lines 41-45).

As to claim 53, Desprez et al. discloses a series circuit formed from a non-reactive resistor and a first transistor, arranged in parallel with at least two capacitors in the capacitor bank; at least one further transistor, connected in parallel with the first transistor, wherein; the transistors are connected to an evaluation device, and wherein

Art Unit: 2857

voltage taps on the capacitors are connected to the evaluation device (col. 4, lines 1-10, and col. 4, line 54- col. 5, line 17).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claim 3, 11, 30, 40, 47, 54, and 55, are rejected under 35 U.S.C. 103(a) as being unpatentable over Desprez et al. (US Patent 6,777,917 B2), in view of Spee et al. (US 6,841,971 B1).

Desprez et al. discloses a method for balancing supercapacitors that includes different voltage levels as addressed above.

Desprez et al. does not specifically disclose the use of optocouplers.

Spee et al., however, discloses, a charge balancing method (title) for supercapacitors (col. 1, lines 35-40) that uses optocouplers (col. 8, lines 6-20) including double couplers (Fig. 9, elements 330 (a and b) and 330 (e and f)), as part of an isolation circuit to accommodate different reference voltages, and teaches that this is conventional in the cited passage.

It therefore would have been obvious to one of ordinary skill in the art at the time of invention to include opto-couplers, as taught by Spee et al., in the method of

Art Unit: 2857

supercapacitor balancing as disclosed by Desprez et al., in order to accommodate reference voltage isolation, in a way that makes use of readily available and reliable equipment.

Response to Arguments

5. Applicant's arguments filed 7/21/05 have been fully considered but they are not persuasive.

The Applicant addresses the prior art reference to Desprez (US Patent 6,777,917) regarding its teaching of bypass functionality, acknowledges that Desprez mentions that a threshold voltage value may be exceeded, but asserts that the reference does not contain teachings pertinent to a fault in a capacitor when a corresponding capacitor voltage is greater than a relatively high voltage level.

While the Examiner agrees with the Applicant regarding the bypass functionality, and the disclosure of exceeding a threshold voltage level, the Examiner is not persuaded by the Applicant's arguments with respect to the term "fault".

The Applicant cites written support for this term in paragraph [0015] of the instant application.

While this section discusses aspects that may be indicative of a fault, the Examiner does not find anything in this section, nor anywhere in the instant specification, to narrowly limit the term "fault" to mean anything beyond that which is consistent with the first sentence of the paragraph, "Overshooting of this highest (voltage) level may be an indication of a fault".

The Examiner therefore considers the reference to teach with respect to this broad, and reasonable interpretation, the occurrence of a "fault" as the reference indicates in the section addressed by the Applicant, that the bypass functionality takes effect when the relevant voltage threshold level is overshoot, and therefore maintains his previous rejection.

Conclusion

6. **THIS ACTION IS MADE FINAL.** Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Anthony Gutierrez whose telephone number is (571) 272-2215. The examiner can normally be reached on Monday to Friday.

Art Unit: 2857

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Marc Hoff can be reached on (571) 272-2216. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


Anthony Gutierrez

10/31/05


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